



PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT (PCT Article 36 and Rule 70)

Applicant's or agent's file reference P9990.WO	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/PEA/416)	
International application No. PCT/E 03/00160	International filing date (day/month/year) 03.12.2003	Priority date (day/month/year) 03.12.2002
International Patent Classification (IPC) or both national classification and IPC A63B69/00		
Applicant MONTAGUE KENYON LIMITED et al.		

- This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
- This REPORT consists of a total of 13 sheets, including this cover sheet.
☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).
 These annexes consist of a total of 1 sheets.

- This report contains indications relating to the following items:
 - I ☒ Basis of the opinion
 - II ☐ Priority
 - III ☒ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
 - IV ☒ Lack of unity of invention
 - V ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
 - VI ☐ Certain documents cited
 - VII ☐ Certain defects in the international application
 - VIII ☐ Certain observations on the international application

Date of submission of the demand 15.06.2004	Date of completion of this report 22.04.2005
Name and mailing address of the International preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized Officer Lundblad, H Telephone No. +49 89 2399-8190 

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. **PCT/E 03/00160**

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, Pages

1-51 as originally filed

Claims, Numbers

1-116 as originally filed

Drawings, Sheets

1/13-13/13 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application; the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:
- ☐ the drawings, sheets:

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. **PCT/IE 03/00160**

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).
(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

III. Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

1. The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non-obvious), or to be industrially applicable have not been examined in respect of:
- ☐ the entire international application,
 - ☒ claims Nos. 114,116
because:
 - ☐ the said international application, or the said claims Nos. relate to the following subject matter which does not require an international preliminary examination (specify):
 - ☐ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. are so unclear that no meaningful opinion could be formed (*specify*):
 - ☐ the claims, or said claims Nos. are so inadequately supported by the description that no meaningful opinion could be formed.
 - ☒ no international search report has been established for the said claims Nos. 114,116
2. A meaningful international preliminary examination cannot be carried out due to the failure of the nucleotide and/or amino acid sequence listing to comply with the standard provided for in Annex C of the Administrative Instructions:
- ☐ the written form has not been furnished or does not comply with the Standard.
 - ☐ the computer readable form has not been furnished or does not comply with the Standard.

IV. Lack of unity of invention

1. In response to the invitation to restrict or pay additional fees, the applicant has:
- ☐ restricted the claims.
 - ☒ paid additional fees.
 - ☐ paid additional fees under protest.
 - ☐ neither restricted nor paid additional fees.
2. ☐ This Authority found that the requirement of unity of invention is not complied with and chose, according to Rule 68.1, not to invite the applicant to restrict or pay additional fees.
3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is
- ☐ complied with.

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. **PCT/E 03/00160**

☐ not complied with for the following reasons:

4. Consequently, the following parts of the international application were the subject of international preliminary examination in establishing this report:

☐ all parts.

☒ the parts relating to claims Nos. 1-113,115 .

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	6- 28,32, 34-40,47,51-54,56-65,68-75,77-78,81-89,91-113,115
	No: Claims	1-5,29-31,33,41-46,48-50,55,66-67,79-80,90
Inventive step (IS)	Yes: Claims	73-75,78,81-89
	No: Claims	1-72,76-77,79-80,90-113,115
Industrial applicability (IA)	Yes: Claims	1-113,115
	No: Claims	

2. Citations and explanations

see separate sheet

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/IE 03/00160

Re Item IV - Lack of unity of invention

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claims: 1-29 (and 102-113 and 115 if they are depending on 1-29)
PROBLEM : How to replicate some of the motion characteristics of an unconnected ball
SOLUTION : To provide the simulator with a connecting means which is operable to provide at least three degrees of freedom and a replicated motion characteristics is substantially straight line movement
2. Claims: 30-41 (and 102-113 and 115 if they are depending on 30-41)
PROBLEM : How to minimize the moment of inertia of the connecting means compared to the moment of inertia of the ball
SOLUTION : To manufacture the connecting member from a high strength-to-weight material
3. Claims: 42-66 (and 102-113 and 115 if they are depending on 42-66)
PROBLEM : How to measure the motion characteristics of the golf ball
SOLUTION : To provide a sensing means
4. Claims: 67-79 (and 102-113 and 115 if they are depending on 67-79)
PROBLEM : How to provide improved ability of measuring the spin characteristics of the golf ball
SOLUTION : To provide the simulator with a connecting means which is operable to allow the ball to spin around two different set axis
5. Claims: 80-89 (and 102-113 and 115 if they are depending on 80-89)
PROBLEM : How to provide a more realistic golf simulator
SOLUTION : To provide the simulator with a measurement means which is operable to determine the motion characteristics of an unconnected ball by comparison of these input signals corresponding to previous shots with known motion characteristics

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/IE 03/00160

6. Claims: 90-101 (and 102-113 and 115 if they are depending on 90-101)
PROBLEM : How to provide a better/safer connection between the ball and the connecting means
SOLUTION : To provide the connecting means with flanges or projections

The common concept in terms of technical features linking these inventions is:

A simulator or measurement apparatus including a ball, a connecting means and a base. Since this has been disclosed in, for example, document US-B1-6 257 989 (Fig. 1) this is not considered novel, hence not inventive, as required by Rule 13.1 PCT.

The technical features as stated in the aforementioned groups of inventions are also not regarded as corresponding to one another, as required by Rule 13.2 PCT

Therefore the Examining Division therefore agrees with the Search Division and considers that the separate inventions or groups of inventions are not so linked as to form a single general concept. The application therefore lacks unity within the meaning of Rule 13.1 PCT.

The applicant has paid the examination fees for the above 6 inventions.

Re Item V

**Reasoned statement with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement**

Reference is made to the following documents:

- D1: US-A-1 976 405 (LE WITT GEORGE) 9 October 1934 (1934-10-09)
- D2: US-A-5 255 920 (MANGERI JOHN J) 26 October 1993 (1993-10-26)
- D3: US-B1-6 257 989 (TORTOLA ANGELO ET AL) 10 July 2001 (2001-07-10)
- D4: US-A-4 407 503 (NISHIZAWA HIDEYUKI) 4 October 1983 (1983-10-04)
- D5: US-A-3 452 990 (NICHOLS EDGAR B) 1 July 1969 (1969-07-01)
- D6: US-A-2 926 919 (HALLORAN AARON J) 1 March 1960 (1960-03-01)
- D7: US-A-3 656 759 (HALL RICHMOND E) 18 April 1972 (1972-04-18)

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/IE 03/00160

D8: GB-A-2 230 460 (MACHIN JOHN THOMAS) 24 October 1990 (1990-10-24)
D9: DE 36 36 515 A (GRENFELDT RUNAR) 28 April 1988 (1988-04-28)
D10: US 2002/128092 A1 (BOLIN DARRIN) 12 September 2002 (2002-09-12)

1. Remarks concerning invention 1:

- 1.1. The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claims 1-5 and 29 is not new in the sense of Article 33(2) PCT.

The document D7 discloses (the references in parentheses applying to this document):

a simulator apparatus including a ball (fig. 1(21)), a connecting means (fig. 1(everything between parts 21 and 2)) which can provide a plurality of degrees of freedom (around joint 3, joint 5 and around head member 9) and which can replicate some of the motion characteristics of an unconnected ball, over a sufficient distance to measure such motion characteristics (column 1, line 36 to 61). The connecting means comprises members of rigid construction (part next to ball on fig. 1) and comprises a plurality of joints (joint at fig. 1(3), fig. 1(5) and fig. 1(9)) at least on a pivot joint (joint at fig. 1(9)). The replicated motion characteristic is substantially a straight line motion (column 1, line 46 to 47). Said simulator apparatus being suitable for putting and driving (fig. 1).

The documents D1-D3 also disclose the features of claims 1-2, 4-5 and 29.

- 1.2. Furthermore the claims 6-28, 102-113 and 115 do not, to the extent that they are technically comprehensible (see also paragraph 1.3 and 1.4 of this report), seem to have a technical problem and/or technical features that would differentiate them from the prior art and would therefore not justify an inventive step according to Article 33(3) PCT.
- 1.3. For example claim 9 states: "wherein the ball is free to move in three-dimensional space". A ball movable in only two dimensions would still move in three-dimensional space. Also the angle of the connecting member, as disclosed in claim 14, could be met by all of the prior arts since the starting point of the ball can be randomly

selected.

- 1.4. Furthermore the majority of joints in the drawings seem to be hinge joints rather than pivot joints. (See images of annex 1). The drawings are not in conformity with the claims as required by Rule 5.1(a)(iii) PCT. The inconsistency between the claims and the drawings leads to doubt concerning the matter for which protection is sought, thereby rendering the claims unclear, Article 6 PCT.
- 1.5. It is acknowledged that the golf ball simulator of the drawings appears to disclose new and inventive subject-matter compared to the prior art but also that the independent claim 1 does not disclose features that seem essential to the functioning of the simulator and to the differentiation compared to the prior art. Such features would be the consecutive arrangement of hinges for rotation in the same plane in order to allow a straight motion of the ball and a rigid construction of the entirety of the connecting means.

2. Remarks concerning invention 2:

- 2.1. The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claims 30, 31, 33 and 41 is not new in the sense of Article 33(2) PCT.

The document D5 discloses (the references in parentheses applying to this document):

a simulator apparatus including a ball (fig. 1(1)), a connecting means (fig. 1(3 and 22)) which can provide a plurality of degrees of freedom (fig. 7). The connecting means comprises a rigid member (fig. 1(3)) made out of a high strength-to-weight material, part of it is tapered with the minimum dimension closer to the ball and the inertia of the connecting means being substantially less than the inertia of the ball (fig. 1). The ball being a simulated golf ball (fig. 2), the elongated member being hollow (fig. 2(34)) and the simulator being adapted for drive and putting shots (would work with any swing speed).

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/IE 03/00160

The documents D4 and D8 also disclose said features.

2.2. Furthermore the claims 32, 34-41, 102-113 and 115 do not, to the extent that they are technically comprehensible (see also paragraph 2.3 of this report), seem to have a technical problem and/or technical features that would differentiate them from the prior art and would therefore not justify an inventive step according to Article 33(3) PCT.

2.3. The wording "the joint about which the arm principally moves when the ball is struck" of claims 32 and 40 is unclear since it is not clear which one this joint might be and on which basis this is to be decided. Furthermore the rotation of the ball would depend on the hit.

3. Remarks concerning invention 3:

3.1. The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claims 42-46, 48-50, 55 and 66 is not new in the sense of Article 33(2) PCT.

The document D9 discloses (the references in parentheses applying to this document):

a golf simulator apparatus including a ball (fig. 2(1)), a connecting means (fig. 2(12)), a base (fig. 1(10)) and a measurement means (fig. 5(33)), the ball being connected by the connecting member to the base (fig. 1 and 2), where the connecting member comprises an elongate member (elongate in the meaning greater length than width), which is connected to the ball (fig. 2), the elongate member and the ball are operable to rotate collectively about an axis which is the elongate axis of the elongate member (around the axis about 16, the vertical part of 12) and a sensing means that senses the rotation (fig. 4(L1-Ln) and communicates with the measurement means (fig. 5).

3.2. D9 also discloses: the elongate member being a rigid member (fig. 3(12)), the sensing means being associated with the distal end of the elongate member (fig. 3 and 4), the sensing means comprising a vane with irregularities (fig. 4(13)) and

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/IE 03/00160

bearings (fig. 3(19)), the measurement means comprising a bridging means with electromagnetic waves (fig. column 3, line 32-36), the member with irregularities being more directly connected to the ball than the bridging means (fig. 3).

3.3. Furthermore the claims 47, 51-54, 56-65 and 102-113 and 115 do not seem to have a technical problem and/or technical features that would differentiate them from the prior art and would therefore not justify an inventive step according to Article 33(3) PCT.

3.4. Although claims 42 and 49 have been drafted as separate independent claims, they appear to relate effectively to the same subject-matter and to differ from each other only with regard to the definition of the subject-matter for which protection is sought and/or in respect of the terminology used for the features of that subject-matter. The aforementioned claims therefore lack conciseness and as such do not meet the requirements of Article 6 PCT.

4. Remarks concerning invention 4:

4.1. The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claims 67 and 79 is not new in the sense of Article 33(2) PCT.

The document D7 discloses (the references in parentheses applying to this document):

a golf simulator apparatus including a ball (fig. 1(21)), a connecting means (fig. 2 and 10(everything between 21 and 68)), a base (fig. 10(68)) and a measurement means (fig. 8 and 2), the connecting member being operable to allow the ball to spin about two axis (fig. 1 (around the axis 1 and the axis 16/19), the measurement means being operable to measure the rotation about said axis (column 4, line 25-35 and column 6, line 50-75).

Document D6 also discloses the above features (column 2, line 29-53).

4.2. Claim 68-72 and 77 do not meet the requirements of Article 6 PCT in that the matter

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/IE 03/00160

for which protection is sought is not clearly defined. The claims attempt to define the subject-matter in terms of the result to be achieved, which merely amounts to a statement of the underlying problem, without providing the technical features necessary for achieving this result.

4.3. Furthermore the claims 76, 102-113 and 115 do not, to the extent that they are technically comprehensible, seem to have a technical problem and/or technical features that would differentiate them from the prior art and would therefore not justify an inventive step according to Article 33(3) PCT.

4.4. The dependent claims 73-75, 78 seem to be new and inventive sense of Article 33(2, 3) PCT.

5. Remarks concerning invention 5:

5.1. The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claim 80 does not involve an inventive step in the sense of Article 33(3) PCT.

The document D7 is regarded as being the closest prior art to the subject-matter of claim 80, and discloses (the references in parentheses applying to this document):

a simulator apparatus including a ball (fig. 1(21)), a connecting means (fig. 2 and 10(everything between 21 and 68)), a base (fig. 10(68)) and a measurement means (fig. 8 and 2), said measuring means includes a sensor means which produce an input signal when the ball is hit, the measurement means is operable to determine the motion characteristics of an unconnected ball by comparison of the input signals to input signals corresponding to previous shots with known characteristics.

The subject-matter of claim 80 therefore differs from this known simulator apparatus in that: the measurement means is operable to determine the motion characteristics of an unconnected ball by comparison of the input signals to input signals corresponding to previous shots with known characteristics.

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/IE 03/00160

5.2. The problem to be solved by the present invention may therefore be regarded as:
how to provide a more realistic golf simulator.

5.3. However, these features have already been employed for the same purpose in a similar simulator apparatus, see document D10, paragraph [0005] - [0009] and fig. 5 and 6. It would be obvious to the person skilled in the art, namely when the same result is to be achieved, to apply these features with corresponding effect to a simulation apparatus according to document D7, thereby arriving at a simulation apparatus according to claim 80.

5.4. Furthermore the claims 102-113 and 115 do not, to the extent that they are technically comprehensible, seem to have a technical problem and/or technical features that would differentiate them from the prior art and would therefore not justify an inventive step according to Article 33(3) PCT.

5.5. The dependent claims 81-89 seem to be new and inventive sense of Article 33(2, 3) PCT.

6. Remarks concerning invention 6:

6.1. The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claim 90 is not new in the sense of Article 33(2) PCT.

The document D5 discloses (the references in parentheses applying to this document):

a simulator apparatus including a ball (fig. 1(1)), a connecting means (fig. 1(3)), a base (fig. 1(2)), the connecting member being of rigid construction (column 3, line 9) and the connecting means comprises projections of flanged components (fig. 1(6)) which resists forces put onto the ball (column 3, line 11-14).

6.2. The claims 91-101, 102-113 and 115 do not seem to have a technical problem and/or technical features that would differentiate them from the prior art and would therefore not justify an inventive step according to Article 33(3) PCT.

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/IE 03/00160

- 6.3. Furthermore the addition of a flanged part inside a moulded object in order to assure a better attachment is considered as being general knowledge of the man skilled in the art of engineering.

Annex 1

